UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF PREVENTION, PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

Date: 29-May-2003

Subject: **Bifenazate** Chronic Dietary Exposure. PC Code: 000586. DP Barcode:D290054

Reviewer/To: Tom Bloem, Chemist
Registration Action Branch 1/Health Effects Division (RAB1/HED; 7509C)

Through: William Cutchin, Chemist
David Soderberg, Chemist
Dietary Exposure Science Advisory Council (DESAC)

Dana Vogel, Acting Branch Senior Scientist
RAB1/HED (7509C)

Executive Summary

The Interregional Research Project Number 4 (IR-4) requested a Section 3 registration for the application of bifenazate (hydrazinecarboxylic acid, 2-(4-methoxy-[1,1'-biphenyl]-3-yl), 1-methylethyl ester) to fruiting vegetables (crop group 8), cucurbit vegetables (crop group 9), tree nuts (crop group 14), pistachio, okra, peppermint, and spearmint. A chronic dietary exposure analysis was conducted to access the dietary exposure resulting from all registered and proposed uses. Bifenazate has been classified as "not likely" to be a human carcinogen by any relevant route of exposure and an acute dietary endpoint was not identified for the general population including infants and children; therefore, acute dietary and cancer exposure assessments were not conducted.

A chronic dietary exposure analysis was conducted using the Dietary Exposure Evaluation Model - Food Commodity Intake Database™ (DEEM-FCID™; ver. 1.30) program which incorporates consumption data from USDA's Continuing Surveys of Food Intakes by Individuals (CSFII), 1994-1996 and 1998. The chronic analysis assumed tolerance level residues and 100% crop treated for all registered and proposed crops excluding tomato where average field trial residues were used. DEEM (ver 7.73) default processing factors were assumed for all commodities excluding apple juice, grape juice, wine/sherry, tomato paste, and tomato puree. The processing factors for these commodities were reduced to 0.23, 0.17, 0.17, 5.0, and 5.0, respectively, based on data from processing studies. The chronic dietary food exposure estimates to bifenazate were less than HED's level of concern (<100% cPAD) for the general US population and all population subgroups. The most highly exposed population was children 1-2 years old at 85% of the cPAD.

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I. Introduction

Dietary risk assessment incorporates both exposure and toxicity of a given pesticide. For acute and chronic assessments, the risk is expressed as a percentage of a maximum acceptable dose. This is the population adjusted dose (PAD), which HED has concluded will result in no unreasonable adverse health effects. The PAD is the Reference Dose (RfD) divided by the special FQPA Safety Factor. Dietary risk is expressed as a percentage of the PAD. For acute and non-cancer chronic exposures, HED is concerned when estimated dietary risk exceeds 100% of the PAD. References which discuss the acute and chronic risk assessments in more detail are available on the EPA/pesticides web site: "Available Information on Assessing Exposure from Pesticides, A User's Guide", 6/21/2000, web link: http://www.epa.gov/fedrgstr/EPA-PEST/2000/July/Day-12/6061.pdf ; or see SOP 99.6 (8/20/99). The most recent dietary risk assessment for bifenazate was conducted by Tom Bloem (30-Aug-2001, D277489).

II. Residue Information

Nature of the Residue - Plants: The HED MARC previously reviewed bifenazate metabolism studies conducted with apple, orange, and cotton and determined that for tolerance expression and risk assessment purposes, the residues of concern in these crops are bifenazate and D3598 (D276801, T. Bloem, 16-Aug-2001). As part of the current petition, the petitioner has submitted a radish metabolism study (45802801.der.wpd; D290053, T. Bloem, 29-May-2003). On the basis of these plant metabolism studies, HED concludes that the nature of the residue in plants is adequately understood and the residues of concern for tolerance expression and risk assessment purposes are bifenazate and D3598 (expressed as bifenazate).

Nature of the Residue - Livestock: The MARC reviewed goat and hen metabolism studies and determined that for tolerance expression and risk assessment purposes, the residues of concern in livestock tissue (excluding fat), eggs, and milk are bifenazate, D3598 (expressed as bifenazate), A1530, and A1530-sulfate (expressed as A1530). The residues of concern for tolerance expression and risk assessment purposes in fat are bifenazate and D3598 (expressed as bifenazate;D276801, T. Bloem, 16-Aug-2001).

Bifenazate is currently registered for application to numerous commodities (40 CFR 180.572). HED has reviewed the residue chemistry data submitted in conjunction with the current petitions and recommended for establishment of the following tolerances (D290053, T. Bloem, 29-May-2003):

Vegetable, fruiting, group 8	2.0 ppm
Vegetable, cucurbit, group 9	0.75 ppm
Okra	2.0 ppm
Nut, tree, group 14	0.20 ppm
Pistachio	0.20 ppm
Peppermint tops	25 ppm
Spearmint tops	25 ppm
Almond, hulls	15 ppm
Milk	0.02 ppm
*Meat	0.02 ppm

*Meat Byproducts . . . . . 0.02 ppm

* of cattle, goat, hog, horse, sheep

The chronic dietary exposure analysis assumed tolerance level residues and 100% crop treated for all registered and proposed crops, excluding tomato, where average field trial residues were used (0.19 ppm; 45772005.der.wpd). DEEM (ver 7.73) default processing factors were assumed for all commodities excluding apple juice, grape juice, wine/sherry, tomato paste, and tomato puree. The processing factors for these commodities were reduced to 0.23, 0.17, 0.17, 5.0, and 5.0, respectively, based on data from processing studies (apple and grape - D277089, T. Bloem, 16-Aug-2001; tomato - 45772006.der2.wpd). Residues in milk fat were set to 0.50 ppm (milk tolerance x 25 = 0.50 ppm) based on the maximum theoretical concentration factor of 25x for milk fat and the ruminant feeding study which resulted in higher residues in fat than in meat and meat byproducts.

III. DEEM-FCID™ Program and Consumption Information

The bifenazate chronic dietary exposure assessment was conducted using the DEEM-FCID™ (Ver. 1.30), which incorporates consumption data from USDA's CSFII, 1994-1996 and 1998. The 1994-96, 98 data are based on the reported consumption of more than 20,000 individuals over two non-consecutive survey days. Foods "as consumed" (e.g., apple pie) are linked to EPA-defined food commodities (e.g. apples, peeled fruit - cooked; fresh or N/S; baked; or wheat flour - cooked; fresh or N/S, baked) using publicly available recipe translation files developed jointly by USDA/ARS and EPA. Consumption data are averaged for the entire U.S. population and within population subgroups for chronic exposure assessment.

For chronic exposure and risk assessment, an estimate of the residue level in each food or food-form (e.g., orange or orange juice) on the food commodity residue list is multiplied by the average daily consumption estimate for that food/food form. The resulting residue consumption estimate for each food/food form is summed with the residue consumption estimates for all other food/food forms on the commodity residue list to arrive at the total average estimated exposure. Exposure is expressed in mg/kg body weight/day and as a percent of the cPAD. This procedure is performed for each population subgroup.

IV. Toxicological Information

The HED HIARC met on four occasions to examine the toxicology database for bifenazate and to determine the appropriate toxicological endpoints for dietary and occupational/residential exposure assessment (meeting date - 21-Aug-2001, 24-Apr-2001, 13-Apr-1999, and 4-Feb-1999). The HIARC along with the HED Food Quality Protection Act Safety Factor Committee (FQPA SFC) evaluated the bifenazate toxicological database in reference to the potential for enhanced sensitivity to infants and children. The decisions made by the FQPA SFC are in accordance with the current 2002 OPP 10X Guidance Document. Based on the conclusions made by the HIARC and FQPA-SFC committee, the complete residue chemistry and environmental fate databases, and the conservative assumptions used when generating the dietary and residential exposure estimates, HED concludes that the special FQPA SF should be reduced to 1x.

Bifenazate has been classified as "not likely" to be a human carcinogen by any relevant route of exposure and an acute dietary endpoint was not identified for the general population including infants and children; therefore, acute dietary and cancer exposure assessments were not conducted. Since the HIARC did not assign any additional uncertainty factors to the endpoints selected for the various routes of exposure assessment and since the special FQPA SF has been reduced to 1x, the total uncertainty factor for all exposure assessments is 100x (10x for interspecies extrapolation, and 10x for intraspecies variation).

Table 1. Summary of Toxicological Doses and Endpoints for Bifenazate for Use in Dietary Exposure Assessment

Exposure Scenario	Dose Used in Risk Assessment, UF	FQPA SF* and Endpoint for Risk Assessment	Study and Toxicological Effects
Acute Dietary; general pop. and females 13-50 years old	An acute dietary endpoint was not selected based on the absence of an appropriate endpoint attributed to a single dose.		
Chronic Dietary; all populations	NOAEL= 1.0 mg/kg/day UF = 100 cRfD = 0.01 mg/kg/day	FQPA SF = 1X cPAD = 0.01 mg/kg/day	LOAEL = 8.9/10.4 mg/kg/day [M/F] based on changes in hematological and clinical chemistry parameters, and histopathology in bone marrow, liver, and kidney in the One Year Dog Feeding Study
Cancer (oral, dermal, inhalation)	bifenazate is classified as "not likely" to be a human carcinogencarcinogen		

V. Results/Discussion

As stated above, for chronic dietary exposure assessment, HED is concerned when dietary risk exceeds 100% of the cPAD. The DEEM-FCID™ analyses estimate the dietary exposure of the U.S. population and 32 population subgroups. Based on an analysis of 1994-96, 98 CSFII consumption data which took into account dietary patterns and number of survey respondents, HED determined that the following population groupings were appropriate for regulatory purposes (exposure estimates for only these populations are reported in Tables 2 and 3; exposure estimates for the remaining populations can be found in the attachments): U.S. population, all infants (<1 year old), children 1-2 years old, children 3-5 years old, children 6-12 years old, youth 13-19 years old, females 13-49 years old, adults 20-49 years old, and/or adults 50+ years old.

Table 2. Results of Chronic Dietary Exposure Analysis

Population Subgroup	cPAD (mg/kg/day)	Exposure (mg/kg/day)	% cPAD
General U.S. Population	0.01	0.002430	24
All Infants (< 1 year old)	0.01	0.005932	59
Children 1-2 years old	0.01	0.008504	85
Children 3-5 years old	0.01	0.006495	65
Children 6-12 years old	0.01	0.003570	36
Youth 13-19 years old	0.01	0.001731	17
Adults 20-49 years old	0.01	0.001713	17
Females 13-49 years old	0.01	0.001650	17
Adults 50+ years old	0.01	0.001803	18

VI. Discussion of Uncertainties

DEEM-FCID™ (ver. 1.30) does not contain any default processing factors and as such, HED inserts, where appropriate, the default processing factors from DEEM™ (ver. 7.76) into the DEEM-FCID™ (ver. 1.30) residue files. There are several processed commodities in the DEEM-FCID™ bifenazate residue list (almond oil, filbert oil, and dried pepper (bell and non-bell)) which were not in DEEM™ (ver 7.76). For these commodities, a processing factor of 1 was assumed. Despite this, HED concludes that the chronic exposure estimates are conservative due to the likely low consumption of these commodities relative to the consumption of the remaining commodities in the bifenazate residue file (fruiting vegetables, pome fruit, cucurbit vegetables) and due to the conservative residue estimates used in the chronic analysis (tolerance level residues and 100 % crop treated).

VII. Conclusions

A chronic dietary exposure analyses was conducted using the DEEM-FCID™ (ver. 1.30) program which incorporates consumption data from USDA's CSFII, 1994-1996 and 1998. The chronic analysis assumed tolerance level residues and 100% crop treated for all registered and proposed crops, excluding tomato, where average field trial residues were used. DEEM (ver 7.73) default processing factors were assumed for all commodities excluding apple juice, grape juice, wine/sherry, tomato paste, and tomato puree. The processing factors for these commodities were reduced to 0.23, 0.17, 0.17, 5.0, and 5.0, respectively, based on data from processing studies. The chronic dietary food exposure estimates to bifenazate were less than HED's level of concern (<100% cPAD) for the general US population and all population subgroups. The most highly exposed population was children 1-2 years old at 85% of the cPAD.

Table 3. Summary of Dietary Exposure and Risk for Bifenazate

Population Subgroup	cPAD (mg/kg/day)	Exposure (mg/kg/day)	% cPAD
General U.S. Population	0.01	0.002430	24
All Infants (< 1 year old)	0.01	0.005932	59
Children 1-2 years old	0.01	0.008504	85
Children 3-5 years old	0.01	0.006495	65
Children 6-12 years old	0.01	0.003570	36
Youth 13-19 years old	0.01	0.001731	17
Adults 20-49 years old	0.01	0.001713	17
Females 13-49 years old	0.01	0.001650	17
Adults 50+ years old	0.01	0.001803	18

Attachment 1: Chronic Dietary Exposure Estimates
Attachment 2: Chronic Residue File

cc: Tom Bloem (RAB1/HED); William Cutchin (Science Information Management Branch/HED)
T. Bloem:CM#2:806-R:703-605-0217:7509C

Attachment 1: Chronic Dietary Exposure Estimates and Residue File

U.S. Environmental Protection Agency Ver. 1.30
DEEM-FCID Chronic analysis for BIFENAZATE (1994-98 data)
Residue file name: C:\bloem\bifenazate\Section 3; almond, cantaloupe, cucumber, mint, pepper, pistachio, squash, tomato\000586c.R98
Adjustment factor #2 NOT used.
Analysis Date 05-22-2003/09:45:31 Residue file dated: 05-22-2003/09:44:51/8
Reference dose (RfD, Chronic) = .01 mg/kg bw/day
COMMENT 1: no acute endpoint identified; FQPA SF of 1x

Total exposure by population subgroup

Population Subgroup	Total Exposure mg/kg body wt/day	Total Exposure Percent of Rfd
U.S. Population (total)	0.002430	24.3%
U.S. Population (spring season)	0.002500	25.0%
U.S. Population (summer season)	0.002818	28.2%
U.S. Population (autumn season)	0.002229	22.3%
U.S. Population (winter season)	0.002165	21.7%
Northeast region	0.002543	25.4%
Midwest region	0.002468	24.7%
Southern region	0.002140	21.4%
Western region	0.002748	27.5%
Hispanics	0.002714	27.1%
Non-hispanic whites	0.002426	24.3%
Non-hispanic blacks	0.002051	20.5%
Non-hisp/non-white/non-black	0.002897	29.0%
All infants (< 1 year)	0.005932	59.3%
Nursing infants	0.003698	37.0%
Non-nursing infants	0.006779	67.8%
Children 1-6 yrs	0.006915	69.2%
Children 7-12 yrs	0.003313	33.1%
Females 13-19 (not preg or nursing)	0.001657	16.6%
Females 20+ (not preg or nursing)	0.001689	16.9%
Females 13-50 yrs	0.001846	18.5%
Females 13+ (preg/not nursing)	0.002205	22.0%
Females 13+ (nursing)	0.002538	25.4%
Males 13-19 yrs	0.001803	18.0%
Males 20+ yrs	0.001785	17.8%
Seniors 55+	0.001843	18.4%
Children 1-2 yrs	0.008504	85.0%
Children 3-5 yrs	0.006495	64.9%
Children 6-12 yrs	0.003570	35.7%
Youth 13-19 yrs	0.001731	17.3%
Adults 20-49 yrs	0.001713	17.1%
Adults 50+ yrs	0.001803	18.0%
Females 13-49 yrs	0.001650	16.5%

Attachment 2: Chronic Residue File

```
Filename: C:\bloem\bifenazate\Section 3; almond, cantaloupe, cucumber, mint, pepper, pistachio,
squash, tomato\000586c.R98
Chemical: bifenazate
RfD(Chronic): .01 mg/kg bw/day  NOEL(Chronic): 0 mg/kg bw/day
RfD(Acute): 0 mg/kg bw/day  NOEL(Acute):  0 mg/kg bw/day
Date created/last modified: 05-20-2003/07:27:42/8          Program ver. 1.30
Comment: no acute endpoint identified; FQPA SF of 1x
```

EPA Code	Crop Grp	Commodity Name	Def Res (ppm)	Adj.Factors #1	#2	Comment
95001280	O	Cottonseed, oil	0.750000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
95001281	O	Cottonseed, oil-babyfood	0.750000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
95001750	O	Grape	0.750000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
95001760	O	Grape, juice	0.750000	0.170	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
95001761	O	Grape, juice-babyfood	0.750000	0.170	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
95001770	O	Grape, leaves	0.750000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
95001780	O	Grape, raisin	1.200000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
95001790	O	Grape, wine and sherry	0.750000	0.170	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
95001880	O	Hop	15.000000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
95002750	O	Peppermint	25.000000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
95002760	O	Peppermint, oil	25.000000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
95003520	O	Spearmint	25.000000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
95003530	O	Spearmint, oil	25.000000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
95003590	O	Strawberry	1.500000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
95003591	O	Strawberry-babyfood	1.500000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
95003600	O	Strawberry, juice	1.500000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
95003601	O	Strawberry, juice-babyfood	1.500000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
21000440	M	Beef, meat	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
21000441	M	Beef, meat-babyfood	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
21000450	M	Beef, meat, dried	0.020000	1.920	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
21000460	M	Beef, meat byproducts	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
21000461	M	Beef, meat byproducts-babyfood	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
21000470	M	Beef, fat	0.100000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
21000471	M	Beef,fat-babyfood	0.100000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
21000480	M	Beef, kidney	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
21000490	M	Beef, liver	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
21000491	M	Beef, liver-babyfood	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
23001690	M	Goat, meat	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
23001700	M	Goat, meat byproducts	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				

23001710	M	Goat, fat	0.100000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
23001720	M	Goat, kidney	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
23001730	M	Goat, liver	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
24001890	M	Horse, meat	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
28002210	M	Meat, game	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
25002900	M	Pork, meat	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
25002901	M	Pork, meat-babyfood	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
25002910	M	Pork, skin	0.100000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
25002920	M	Pork, meat byproducts	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
25002921	M	Pork, meat byproducts-babyfood	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
25002930	M	Pork, fat	0.100000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
25002931	M	Pork, fat-babyfood	0.100000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
25002940	M	Pork, kidney	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
25002950	M	Pork, liver	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
29003120	M	Rabbit, meat	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
26003390	M	Sheep, meat	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
26003391	M	Sheep, meat-babyfood	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
26003400	M	Sheep, meat byproducts	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
26003410	M	Sheep, fat	0.100000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
26003411	M	Sheep, fat-babyfood	0.100000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
26003420	M	Sheep, kidney	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
26003430	M	Sheep, liver	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
27002220	D	Milk, fat	0.500000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
27002221	D	Milk, fat - baby food/infant for	0.500000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
27012230	D	Milk, nonfat solids	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
27012231	D	Milk, nonfat solids-baby food/in	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
27022240	D	Milk, water	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
27022241	D	Milk, water-babyfood/infant form	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
27032251	D	Milk, sugar (lactose)-baby food/	0.020000	1.000	1.000	3E0651
		Full comment: 3E06517, res chem - D290054				
08001480	8	Eggplant	2.000000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08002340	8	Okra	2.000000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08002700	8	Pepper, bell	2.000000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08002701	8	Pepper, bell-babyfood	2.000000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08002710	8	Pepper, bell, dried	2.000000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08002711	8	Pepper, bell, dried-babyfood	2.000000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08002720	8	Pepper, nonbell	2.000000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				

08002721	8	Pepper, nonbell-babyfood	2.000000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08002730	8	Pepper, nonbell, dried	2.000000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08003740	8	Tomatillo	2.000000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08003750	8	Tomato	0.190000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08003751	8	Tomato-babyfood	0.190000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08003760	8	Tomato, paste	0.190000	5.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08003761	8	Tomato, paste-babyfood	0.190000	5.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08003770	8	Tomato, puree	0.190000	5.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08003771	8	Tomato, puree-babyfood	0.190000	5.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08003780	8	Tomato, dried	0.190000	14.300	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08003781	8	Tomato, dried-babyfood	0.190000	14.300	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
08003790	8	Tomato, juice	0.190000	1.500	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
09020210	9B	Balsam pear	0.750000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
09010750	9A	Cantaloupe	0.750000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
09010800	9A	Casaba	0.750000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
09020880	9B	Chayote, fruit	0.750000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
09021020	9B	Chinese waxgourd	0.750000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
09021350	9B	Cucumber	0.750000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
09011870	9A	Honeydew melon	0.750000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
09023080	9B	Pumpkin	0.750000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
09023090	9B	Pumpkin, seed	0.750000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
09023560	9B	Squash, summer	0.750000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
09023561	9B	Squash, summer-babyfood	0.750000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
09023570	9B	Squash, winter	0.750000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
09023571	9B	Squash, winter-babyfood	0.750000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
09013990	9A	Watermelon	0.750000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
09014000	9A	Watermelon, juice	0.750000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054				
11000070	11	Apple, fruit with peel	0.750000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
11000080	11	Apple, peeled fruit	0.750000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
11000081	11	Apple, peeled fruit-babyfood	0.750000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
11000090	11	Apple, dried	0.750000	8.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
11000091	11	Apple, dried-babyfood	0.750000	8.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
11000100	11	Apple, juice	0.750000	0.230	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
11000101	11	Apple, juice-babyfood	0.750000	0.230	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
11000110	11	Apple, sauce	0.750000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				
11000111	11	Apple, sauce-babyfood	0.750000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089				

11001290	11	Crabapple		0.750000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
11002100	11	Loquat		0.750000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
11002660	11	Pear		0.750000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
11002661	11	Pear-babyfood		0.750000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
11002670	11	Pear, dried		0.750000	6.250	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
11002680	11	Pear, juice		0.750000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
11002681	11	Pear, juice-babyfood		0.750000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
11003100	11	Quince		0.750000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
12002300	12	Nectarine		1.700000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
12002600	12	Peach		1.700000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
12002601	12	Peach-babyfood		1.700000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
12002610	12	Peach, dried		1.700000	7.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
12002611	12	Peach, dried-babyfood		1.700000	7.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
12002620	12	Peach, juice		1.700000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
12002621	12	Peach, juice-babyfood		1.700000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
12002850	12	Plum		0.300000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
12002851	12	Plum-babyfood		0.300000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
12002860	12	Plum, prune, fresh		0.300000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
12002861	12	Plum, prune, fresh-babyfood		0.300000	1.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
12002870	12	Plum, prune, dried		0.300000	5.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
12002871	12	Plum, prune, dried-babyfood		0.300000	5.000	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
12002880	12	Plum, prune, juice		0.300000	1.400	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
12002881	12	Plum, prune, juice-babyfood		0.300000	1.400	1.000	0F0610
		Full comment: 0F06108, res chem - D277089					
14000030	14	Almond		0.200000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054					
14000031	14	Almond-babyfood		0.200000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054					
14000040	14	Almond, oil		0.200000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054					
14000041	14	Almond, oil-babyfood		0.200000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054					
14000590	14	Brazil nut		0.200000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054					
14000680	14	Butternut		0.200000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054					
14000810	14	Cashew		0.200000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054					
14000920	14	Chestnut		0.200000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054					
14001550	14	Filbert		0.200000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054					
14001560	14	Filbert, oil		0.200000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054					
14001850	14	Hickory nut		0.200000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054					
14002130	14	Macadamia nut		0.200000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054					
14002690	14	Pecan		0.200000	1.000	1.000	3E0651
		Full comment: 3E06517; res chem - D290054					

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14002820 14   Pistachio                          0.200000   1.000  1.000  3E0651
          Full comment: 3E06517; res chem - D290054
14003910 14   Walnut                            0.200000   1.000  1.000  3E0651
          Full comment: 3E06517; res chem - D290054
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